

## **SYSTEMS AND METHODS FOR DISCOVERING MUTUAL DEPENDENCE PATTERNS**

### **Abstract of the Disclosure**

5 A new form of pattern is provided, referred to as a mutual dependence pattern or  
m-pattern. The m-pattern captures mutual dependence among a set of items. Intuitively,  
the m-pattern represents a set of items that often occur together. In our experience, such  
m-patterns often provide great values for certain tasks, such as event correlation in event  
management. Further, an efficient algorithm is provided for discovering all m-patterns in  
10 data for a given minimum mutual dependence threshold. Specifically, a linear algorithm  
is provided for testing whether a pattern is an m-pattern. Further, a pruning algorithm is  
provided that prunes the search space effectively. Still further, a level-wise algorithm for  
mining m-patterns is provided.

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